



Wisconsin Power and Light Company
4902 North Biltmore Lane
Suite 1000
Madison, WI 53718

Office: 1.800.862.6222
www.alliantenergy.com

Public Service Commission of Wisconsin
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Writer's Phone: 608-458-3086
Writer's FAX: 608-458-0133
Writer's Email: BrianPenington@alliantenergy.com

Ms. Stephany Powell Coker
Secretary to the Commission
Public Service Commission of Wisconsin
610 North Whitney Way
P.O. Box 7854
Madison, Wisconsin 53707-7854

RE: Wisconsin Power and Light Voluntary Programs Docket No. 6680-EE-2021

Dear Secretary Coker:


Enclosed are the Wisconsin Power and Light 2021 ELIWP Evaluation Plan.

If you have any questions on the proposed program, please contact Jeff Adams, Lead Customer Program Manager, 608-458-8419; JeffAdams@alliantenergy.com.

Sincerely,

/s/ **Brian Penington**

Brian Penington
Manager Regulatory Affairs
Wisconsin Power and Light Company



Wisconsin Power and Light Voluntary Program Evaluation Plan

ENHANCED LOW-INCOME WEATHERIZATION PROGRAM

June 24, 2021

Prepared for:

Wisconsin Power and Light

4902 North Biltmore Lane

Madison, WI 53718-2418

Introduction

The Enhanced Low-Income Weatherization Program (ELIWP) is a voluntary Program that provides whole-home weatherization services for low-income, qualified homeowners who use natural gas as a heating fuel. The Program coordinates with Focus on Energy (Focus) to assist customers at or below 80% of the state median income level who participate in Focus' Home Performance with ENERGY STAR TIER 2 Incentive Program. The Home Performance with ENERGY STAR TIER 2 Incentive Program offers the following:

- \$50 home energy assessments
- Incentives for subsequent installation of eligible insulation and air sealing measures

The ELIWP provides additional dollars (up to \$8,000 per home) to cover the remainder of the full cost of eligible TIER 2 measures, as well as additional measures not installed by Focus on Energy, as shown in Table 1. The ELWIP is modeled after the We Energies Residential Assistance Program.

The ELIWP is delivered by Focus on Energy Trade Allies. These Trade Allies verify that customers are eligible, conduct the Focus on Energy assessment, and install Focus on Energy measures as well as additional measures offered by Wisconsin Power and Light (WPL). The ELIWP pays the cost of all measures not covered by the TIER 2 Focus Program, up to an \$8,000 per home maximum. Table 1 lists the measures offered by both Programs.

Table 1. Enhanced Low-Income Weatherization Program and Focus on Energy TIER 2 Incentive Program Measures

Measure	Focus on Energy TIER 2 Incentive Program	Enhanced Low-Income Weatherization Program
Attic and wall insulation	Yes	Pays remaining costs for measures installed by Focus
Air sealing	Yes	Pays remaining costs for measures installed by Focus
High-efficiency furnace and boiler replacement	Yes	Pays remaining costs for measures installed by Focus
Smart Thermostats	Yes	Pays remaining costs for measures installed by Focus
Water Heaters	Yes	Pays remaining costs for measures installed by Focus
Sill box insulation	No	Yes
Air infiltration not included under Focus incentive (e.g. hole in external door, broken glass on external window)	No	Yes
Furnace and boiler tune-ups and repairs	No	Yes
Other natural gas appliance repair or replacement if needed	No	Yes
Health/safety purposes due to enhanced air sealing	No	Yes
Carbon Monoxide Detector	No	Yes
Direct install LED bulbs	No	Yes

The primary reason for implementing this program is a lack of weatherization programs and resources for low-income customers. The energy savings goals are not formalized, and target the highest gas users, with an average thermal savings goal of 200 therms per house per year. The program is designed to weatherize 50 homes per year, so the overall thermal savings goal is approximately 10,000 therms per year. This goal is measured by collecting gas usage from the following heating season and comparing to pre-participation usage. Other primary goals include customer satisfaction, loyalty, and engagement that are measured via a participant survey administered by Cadmus.

The ELIWP successfully served 50 customers by 2020. The following sections detail Cadmus' process evaluation. The ELIWP is not marketed through any advertisements or public media. All customer referrals for the ELIWP come through the ELWIP Program Manager, who coordinates with Focus on Energy.

Savings Estimates

Energy use data was collected on a monthly basis for 46 qualifying, low-income homeowners. In cases where more than 12 months of pre- or post-weatherization data was available, an average of the duplicate months was calculated. Program impacts for each month of the year were calculated by comparing individual months prior to and post-weatherization. Of the homeowners included in the analysis, 31 had complete data for a full 24 months.

In cases where the participant changed address, the energy use data was removed for the address that did not receive weatherization. This was the case for four participants. In cases where the participant did not have sufficient corresponding data for pre- and post-weatherization, their energy use data was removed from the savings estimate calculations completely. This was the case for two of the participants. In cases where the participant had fewer than 24 data points, an average was calculated from the existing data and applied to the missing months, to approximate the savings from the months without collected data. This was the case for 13 participants. Participants that did not have 12 months of pre- and post-weatherization consumption history are listed below in Table 2.

Table 2. Enhanced Low-Income Weatherization Program Monthly Data Exceptions

Anonymous Customer Number	Gas Use Data [Months]		Electric Use Data [Months]		Notes
	Pre-period	Post-period	Pre-period	Post-period	
04	4	8	4	8	Address Change, Removed
06	1	11	1	11	Insufficient Data, Removed
07	12	7	12	7	Extrapolated Monthly Average
08	12	11	12	11	Extrapolated Monthly Average
11	12	12	-	-	Gas Only
12	11	12	12	12	Extrapolated Monthly Average
14	12	12	12	12	Address Change
16	-	-	12	12	Electric Only

Anonymous Customer Number	Gas Use Data [Months]		Electric Use Data [Months]		Notes
	Pre-period	Post-period	Pre-period	Post-period	
19	5	12	5	12	Address Change, Extrapolated Monthly Average
20	12	8	12	8	Extrapolated Monthly Average
21	12	7	12	7	Extrapolated Monthly Average
27	12	1	12	1	Address Change, Removed
28	12	6	12	6	Extrapolated Monthly Average
32	12	9	12	9	Extrapolated Monthly Average
33	12	7	12	7	Extrapolated Monthly Average
34	12	6	12	6	Extrapolated Monthly Average
37	12	8	12	8	Extrapolated Monthly Average
41	12	11	12	11	Extrapolated Monthly Average
42	12	6	12	6	Extrapolated Monthly Average

The average annual energy savings for the remaining 44 homeowners was calculated by finding the difference in average energy use before and after weatherization for each month in kWh/day and CCF/day. These values were then used to calculate an estimated annual savings for each homeowner in kWh and therms.

The ELIWP achieved an average annual savings of 628 kWh and 222 therms per home for electric and gas, respectively. The 2021 Technical Reference Manual¹ lists prescriptive annual savings values for the weatherization of homes which use gas as a primary heating fuel as 749 kWh and 238 therms, which are only slightly higher than the values calculated in this analysis. These differences could be explained by different weather conditions in the pre- and post-weatherization periods, increased time spent at home due to COVID-19 in the post-weatherization period, or the extrapolation of partial year data.

Process Evaluation

Objectives

The Enhanced Low-Income Weatherization Program Process Evaluation successfully completed the following activities:

- Stakeholder interviews
- Participant satisfaction assessment
- Outline of the Program's processes
- Determined behavioral changes due to the Program; and

¹ [Focus on Energy 2021 TRM](#), MMID 4886, P. 1096

- Developed recommendations for Program improvement

Methodology

Cadmus collected primary data for the process evaluation through interviews with Program staff, key stakeholders, Trade Allies, and program participants. Secondary data analysis included a review of Program materials. Table 2 details our process evaluation data collection efforts.

Table 2. Process Data Collection Efforts

Data Type	Activity	Planned Sample Size	Achieved Sample
Primary	Interviews with Staff and Stakeholders	1–4	2
	Interviews with Trade Allies	2–4	2
	Surveys of Program Participants	30	21*
Secondary	Review of Program Materials	Program Design, Guidelines, and Trade Ally Materials	-

*Participant surveys commenced when the Program had amassed 60 participants. Of these, five declined the survey and eight did not have a valid phone number or email listed. Cadmus exhausted all outreach attempts by contacting the remaining participants up to three times each.

Process Evaluation Activities

Cadmus conducted the following process evaluation activities:

- Reviewed program materials
- Telephone interviews with two program stakeholders
- Telephone interviews with two trade allies
- Telephone and online survey with 21 program participants

Program Materials Review

Cadmus reviewed Program materials covering the Program design and guidelines for Trade Allies. The ELIWP has no public marketing materials so the review focuses on the clarity of Program processes, quality control, and Program effectiveness.

Process Mapping

Cadmus created Table 3 below to present Program Manager, Trade Ally, and participant interaction with ELIWP.

Table 3. ELIWP Process Map

Market Actor	Market Barriers	Intervention Strategies/Activities	Outcomes	Key Indicators
End-Use Customer				
Income qualified residential customers	<ul style="list-style-type: none"> • Lack of understanding of ELIWP benefits • Lack of education about energy saving opportunities • Lack of awareness of ELIWP offerings • Scheduling an in-home audit 	<ul style="list-style-type: none"> • Information via mail provided about the program • User education provided during in-home energy audit • Educate Focus on Energy customer service representatives to handle questions about the program 	<ul style="list-style-type: none"> • Increased customer understanding of ELIWP offerings • Improved customer perception of Alliant Energy • Customer satisfaction with installed measures • Customer satisfaction with the program 	<ul style="list-style-type: none"> • Number of customers enrolled in the program • Measure satisfaction ratings • Program satisfaction ratings • Alliant Energy satisfaction ratings
Trade Allies				
In-home audit contractors	<ul style="list-style-type: none"> • Lack of information about the ELIWP • Customer distrust of the ELIWP • Scheduling in-home audits • Lack of education about energy savings opportunities 	<ul style="list-style-type: none"> • Referred qualified customers to the ELIWP • Gave participants an individualized report detailing their recommendations for energy efficiency and safety improvements, energy savings, and carbon monoxide test results • Followed up after the initial home energy assessments with a post installation quality control inspection 	<ul style="list-style-type: none"> • Properly installed and functioning energy-saving measures • Positive customer experience with the in-home audit • Increased customer understanding of energy saving methods 	<ul style="list-style-type: none"> • Contractor satisfaction ratings • Sign-up experience ratings • Installation experience ratings

Stakeholder Interviews

The Cadmus team interviewed two program implementers to better understand ELIWP processes and identify opportunities and barriers to program effectiveness. The interviews explored program goals, design, and implementation.

Program Design and Implementation

The ELIWP program met its goal of enrolling at least 50 participants by 2020. Pre-qualified participants are invited via mail to participate in the program on a rolling basis. The letters come directly from Alliant Energy. Participants then reach out directly to trade allies to schedule their home assessment. Trade allies were also able to recommend the program to any customers that they worked with who qualified for the Home Performance with ENERGY STAR TIER 2 Incentive Program. Implementers noted language barriers and distrust of the program as the two main challenges to program participation. Focus on Energy customer service representatives were equipped to handle program questions in order to increase trust with the program. Program implementers noted that letters in combination with outreach phone calls may help market the program in the future.

Trade Ally Interviews

The Cadmus team completed two interviews with participating trade allies to better understand program processes and identify opportunities for program improvement.

Program Implementation

At the end of each home energy assessment, trade allies give participants an individualized report detailing their recommendations for energy efficiency and safety improvements, energy savings, and carbon monoxide test results. After the initial home energy assessments, trade allies then follow up with a post installation quality control inspection.

Trade allies said they most frequently installed wall insulation, basement insulation, attic insulation, spray foam, furnace replacements, and hot water heaters for the program. One trade ally noted that 75% of their customers had a carbon monoxide detector installed, which were not included in the ELIWP offering. Both trade allies said that customers were most interested in window upgrades, which are not currently offered through the program.

Barriers to Participation

Both trade allies noted a few barriers to customer participation. One trade ally said that participants often believe that they can choose their own measure updates and scheduling can sometimes be an issue. One trade ally felt that the cost cap of \$8,000 per home could be \$1,000-\$2,000 higher to help cover the cost of HVAC improvements, but the other trade ally felt that the \$8,000 was sufficient for the program.

Program Satisfaction

Both trade allies said their participation in the ELIWP program has helped increase their company's revenue. Additionally, both trade allies were satisfied with the variety of measures offered through the program, support they received from Alliant Energy, and their overall experience with ELIWP. The Cadmus team asked participating trade allies if there was anything that Alliant Energy could change about the program to improve it. Both trade allies said that Alliant Energy could provide more outreach and information about the program to help build trust with the program. One trade ally recommended that organizations that work directly with low-income customers could help market the program.

Participant Survey

The participant survey assessed the following:

- Program satisfaction with Program, measure performance, Utility, and contractors
- Program challenges and suggestions for improvement
- Participant motivations for participation
- Measure retention
- Behavioral changes
- Non-energy benefits
- Demographics

Participant Satisfaction and Awareness

Respondents rated their satisfaction with application timeline, contractors, and the program overall on a scale of 1 to 10, where 1 is *not at all satisfied* and 10 is *very satisfied*. Respondents gave an average rating of 9.5 for their satisfaction with the ELIWP. Respondents were satisfied with the length of time it took to install program measures and with the contractor who completed the installations (Table 4). Most respondents said it was *very easy* to apply to the ELIWP (14 Of 20). No respondents said the application process was not easy. Three respondents left a comment for improvement which included offering a better selection of LEDs, a greater selection of contractors, and offering window upgrades through the program.

Table 4. Program Satisfaction

	Satisfaction Rating (n=21)
Program Overall	9.5
Length of time to install measures	9.1
Contractor who completed measure installation	9.0

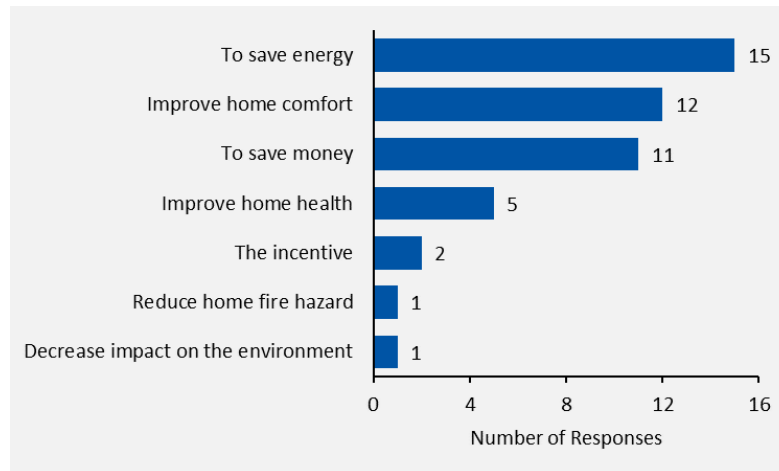
Source: Survey Question B11 "How would you rate your overall satisfaction with the Enhanced Weatherization Program?" And B5 "On a scale of 1 to 10, where 1 is not at all satisfied and 10 is very satisfied, how satisfied were you with the length of time it took for the [Field-1] installation after the home energy assessment?" And B6 "On a scale of 1 to 10, where 1 is not at all satisfied and 10 is very satisfied, how satisfied were you with the contractor that conducted the [Field-1] installation?"

The ELIWP only promoted the program via mail or through contractor referrals; however more than a third of respondents said they heard about the program from a friend or family member. Only three of the 21 respondents recalled learning about the program through a letter in the mail.

Benefits of participation

Respondents said they were most motivated to participate in the program to save energy (15 respondents) and to save money (11 respondents; Figure 1)

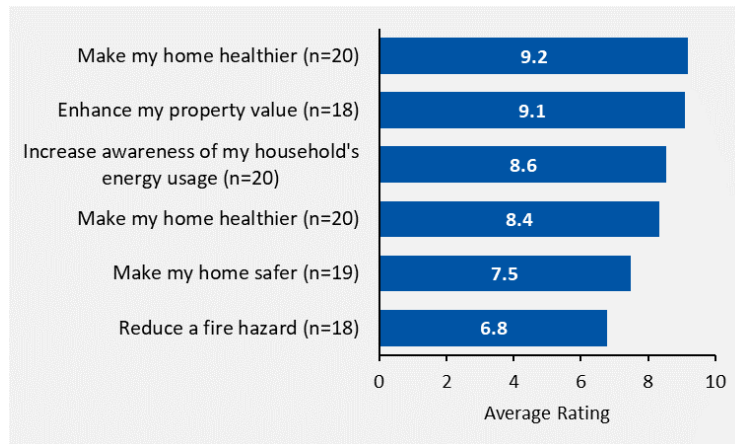
Figure 1. Motivation to Participate



Source: Survey Question C1 “What motivated you to participate in the Enhanced Weatherization Program?”
Multiple responses allowed (n=20)

Respondents agreed that the program helped make their homes healthier and enhanced their property values. Figure 2 shows the average rating for each program benefit. Most respondents (18 of 20) have not purchased or installed any other energy-efficient products in their home after participating in the program, but six respondents said they had plan to purchase new equipment within the next year. These energy-efficient products included new doors, windows, washer/dryer, and air conditioning.

Figure 2. Benefits of the Program



Source: Survey Question C3 "The following are potential benefits of your participation in the Enhanced Weatherization Program. For each item, rate your agreement with the statement on a 1 to 10 scale, where 1 means "strongly disagree" and 10 means "strongly agree." I participated in the Enhanced Weatherization Program to..."

Most respondents (10 of 17) had at least one reservation about participating in the program, including:

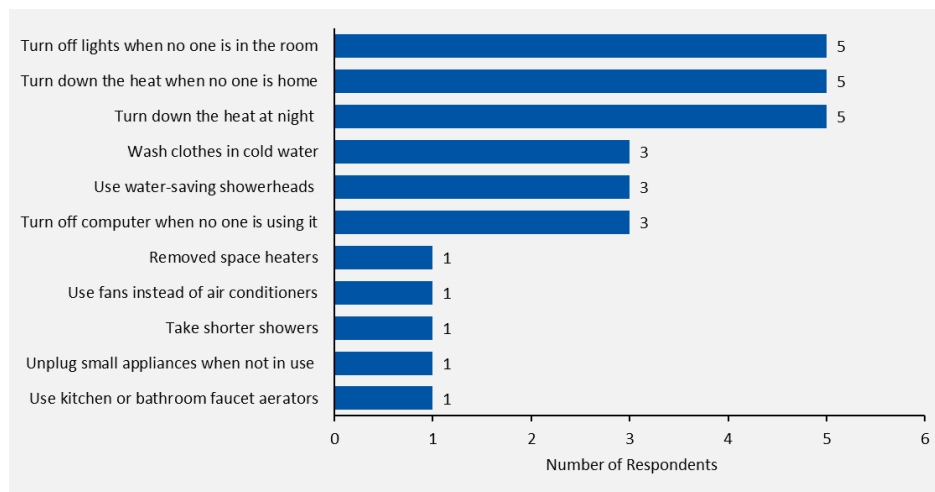
- Did not understand how the program worked (5 respondents)
- Unsure about the cost/finances (4 respondents)
- Did not think they qualified (3 respondents)
- Unsure about potential energy savings (2 respondents)
- Did not know enough about program benefits (2 respondents)

Respondents were asked if they have seen a decrease in their monthly energy costs since installing measures through the program. Fourteen of 18 respondents said they have noticed a decrease in their monthly energy costs since installing their program-supplied measures. Respondents reported an average rating of 9.4 for their satisfaction with the decrease in their monthly energy costs.

Behavioral Changes

Since participating in the program, 6 of 21 respondents said they have changed their daily behavior related to energy consumption. As shown in Figure 3, turning off lights, turning down the heat in unoccupied homes, and turning down the heat at night were the three common behavior changes.

Figure 3. Behavior Changes Related to Energy Consumption



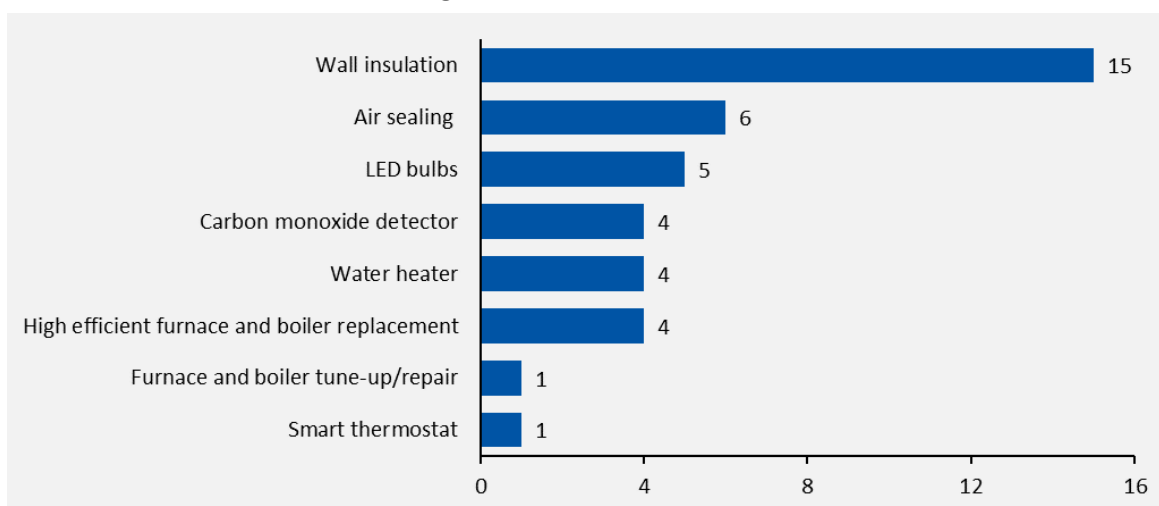
Source: Survey Question E6 “Please select your household’s new daily behavior(s) related to energy consumption.” Multiple responses allowed (n=6).

The Cadmus team asked respondents if they had purchased or installed any other energy-efficient products in their home due to their participation with the program. Two of 18 respondents indicated that they purchased a new energy-efficient product, including LEDs and a new refrigerator. In the future, four respondents said that they plan on purchasing new windows, doors, and appliances to improve the energy efficiency of their home.

Measure Retention

Respondents were able to install different measures through the program. Most respondents had wall insulation (15 of 21) installed. Sill box insulation, air infiltration sealing, natural gas appliance repair/replacement were also offered through the program; however, no respondents reported installing/implementing these measures. No respondents indicated that they removed or uninstalled their equipment at the time of the survey.

Figure 4. Measures Installed



Source: Survey Question A1 “Our records show that you participated in Alliant Energy’s Enhanced Weatherization Program. Which of the following did you purchase and/or install through this program? (select all that apply).” (n=21)

Demographics

Of 20 respondents, 19 lived in a single-family home and one lived in a multifamily apartment/condo. As shown in Table 5, almost half of respondents lived in a home that was built between 1951 to 2000. The size of homes ranged from 930 square feet to 2,650 square feet. Sixteen of 20 respondents currently own their home and over half of respondents lived in a home with three family members or less (18 of 20). Most respondents heated their home with a gas furnace (18 of 20) and cool with their home with a central air conditioning system (16 of 20).

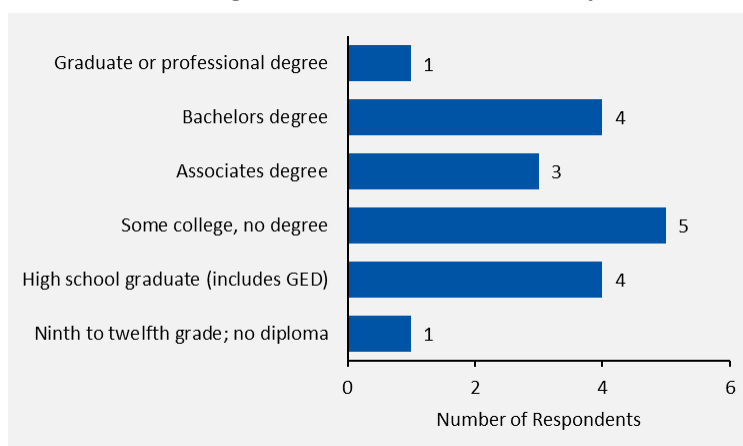
Table 5. Home Age

Year Home Built	Number of Respondents
1900 or earlier	5
1901 to 1950	3
1951 to 2000	8
2001 or later	1

Source: Survey Question G2 “In what year was your home built?” (n=17)

Over half of respondents had some college experience (Table 6).

Table 6. Highest Level of Education Completed



Source: Survey Question G8 “What is the highest level of school that you have completed?” (n=18)

Conclusions and Recommendations

Conclusion 1: Overall, the program achieved very high satisfaction ratings. Respondents were highly satisfied (9.5) with the program, the length of time it took to install program measures (9.1), and with the contractor who completed the installations (9.0).

Conclusion 2: Alliant Energy’s outreach methods were not how participants mostly commonly learned about the program. More than a third of respondents said they heard about the program from a friend or family member, while only three respondents recalled learning about the program through a letter in the mail (n=21).

Recommendation 1: Alliant Energy could consider implementing follow-up phone calls or door-to-door canvassing after the initial program letter to encourage more eligible customers to participate.

Conclusion 3: Less than half of respondents changed said they have changed their daily behavior related to energy consumption since participating in the program (6 of 21).

Recommendation 2: Supply program contactors with leave-behind materials outlining behavior related energy-savings tips to help maximize program savings.